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ABSTRACT

Middle-school students, called "transescent learners," are at an age during which they undergo physical and intellectual changes that affect them emotionally and socially, causing confused thinking and insecure feelings. This paper offers seven guidelines to help the middle-school teacher select and present reading materials that enhance learning by minimizing insecurity. The guidelines are to provide as much independent reading as possible; to structure the choices for independent reading; to analyze reading materials according to sentence length and complexity, vocabulary, and concept density; to use the student's background by providing materials on subjects that are familiar to the student; to use reading materials that have egocentric content, reflecting the learner's interests; to emphasize content organization as a means of improving reading comprehension; and to value convergent thinking, which will stimulate learning while it provides security. (RL)

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USING RESEARCH ON READABILITY TO ENHANCE MIDDLE SCHOOL CURRICULUM MATERIALS

by

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

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Middle schools were designed to meet the needs of students in transition between childhood and adolescence and the term transescence was coined to describe these students. The transescent learner is in transition in several ways; he is undergoing physical and intellectual changes which in turn affect him emotionally and socially. The physical, emotional and social transitions are more easily recognized. Less obvious is the intellectual transition in which the student is moving from concrete thinking operations to formal thinking operations. Those who work with transescents are aware of the obvious changes like moodiness: one hour the transescent may be downcast and the next hour happy. What teachers often fail to recognize is that one hour the transescent may only be able to operate on the concrete level while during the next hour he will surprise his instructor with abstract generalizations. Such variability within himself may or may not be recognized by the transescent. When it is recognized, however, the transescent must surely find himself at times confused, unsure, insecure.

Middle school planners recognized that transescents are often insecure and suggested both organizational and instructional strategies to assist the students in understanding their physical, emotional, and social changes. However, the

task of coping with the movement between intellectual stages is usually left up to curricular planners and instructors. Ultimately, it is the teacher who must plan curricular experiences for students who are transitory in their intellectual processes. The teacher must remember that the transescent, like the child beginning to walk who sometimes regresses to the security of crawling, may need sometimes to think at simple, concrete levels.

The insecurity caused by the transescent's fluctuating growth pattern collides with the nature of the learning act. The process of learning, by virtue of its very definition, mandates change. Any change in behavior necessitates leaving the safety of personal assumptions and familiar ideas to risk the possibility of failure. Learning cannot be accomplished unless an individual is willing to take certain risks and venture into unknown areas. However, risk taking generates insecurity. The more insecurity which an individual feels, the less he is inclined to take the necessary risks which must precede learning. Therefore, it is necessary for a person to have a minimum level of personal security before he can become involved in the process of learning.

It has already been stated that a transescent, because he is in a state of transition, often is plagued by feelings of insecurity and inferiority. If the transescent is placed into

a learning environment which forces him to take great risks, the potential for insecurity is measurably increased. A learning environment which allows students to explore new ideas and new behaviors without necessitating excessive risks is needed.

A setting for learning which would best fulfill the needs of the transescent would foster learning while minimizing insecurity. In such a setting, certain components of the learning environment would be controlled. A list of these components would undoubtedly contain references to what has variously been called conditions of emotional support, procedures to enhance psychological safety, openness in the classroom, and humanizing the classroom. However, these components refer to the interaction of the teacher with his students. It is the purpose of this paper to focus attention on those components of the learning environment which involve the interaction of the student with curricular materials. Although it is recognized that the setting for learning involves many interactions, the student-material interaction is often a major concern of teachers. The teacher's role in this interaction is the selection and presentation of curricular materials.

The following seven guidelines are offered to assist the teacher in selecting and presenting curricular materials which

will foster learning while minimizing insecurity. These are: (1) Provide Much Reading at the Independent Level; (2) Provide Readable Materials; (3) Utilize the Transescent's Background of Experiences; (4) Use Ego-centric Content; (5) Emphasize Content Organization; (6) Value Convergent Thinking; (7) Structure Choices.

Provide Much Reading at the Independent Level

Reading like any other skill must be practiced to be maintained and to have a foundation upon which to add to skill development. The learner must have daily practice at his independent level. This concept is vital to a reading program for all readers.

If a middle school is to help every transescent learn in an atmosphere of personal security, it is absolutely essential that multi-level materials be made available, so that every student can read widely on his independent level. It will often be necessary, therefore, to provide curricular materials written on levels from early elementary through high school. Teachers should expect these reading level differences and provide for these differences routinely. For too many teachers, there are curricular materials for "grade level" and then materials for the others, seemingly provided as an afterthought or provided with an air of, "I'm doing them a favor."

Materials are available for the average and above average readers, and it is possible for careful teachers to match students' reading abilities with materials at these levels. Teachers and publishers have attempted to provide materials for the below average reader, but this attempt has often been relatively unsuccessful. Usually these materials, written on a primary level, have used printing and illustration formats which have stamped this material as obviously easy and thereby give the unwritten message of inferiority to the transescent. It is possible, of course, to use a high status format when printing materials; i.e., a format in which the materials, although written on primary levels of readability, use type, margination, and illustrations similar to those used in upper level texts.

Teachers should recognize the need for practice at the independent level and should support this necessary practice by providing multi-level materials in all subjects. In our schools and in our society, the ability to read is valued and no where is there greater potential for security and success than in the reading program.

Provide Readable Materials

Teachers working in middle schools and publishers have attempted to provide materials which can be easily read by students, and they have chosen books which they felt were more

readable. However, an erroneous assumption often applied by persors selecting materials for a middle school curriculum is that large print, wide margins, and many illustrations will make a book highly readable. A closer look at many of these materials designed for ease of reading often illustrates that while these materials do indeed appear more readable, changing the margination, printing, and illustration formats have changed the actual readability only to a very small extent.

There are many factors which effect the readability level of materials. Probably the three factors which result in the greatest change in readability are the (1) length and complexity of sentences, (2) the frequency of the vocabulary used, and (3) the concept density of the material (Bormuth, 1966; Klare, 1968, 1974; Harris, 1975; MacGinitie, 1971).

Sentence Length and Complexity

Sentence length and sentence complexity are well recognized indicators of readability. Generally the shorter the sentence the more readable it is. Therefore, an efficient and relatively easy method for increasing readability is to shorten the sentences. Often shortening the sentences is all that is necessary to increase readability. However, if done to an extreme, shortening the sentences results in short, choppy selections made up of only simple sentences. The linguistic

uniqueness of this style of prose often renders it more difficult to read. Therefore, material which is readable should contain a variety of sentence types, but the overall length of the sentences should not be excessive. An examination of many of the popularly used readability formulas shows that an average sentence length of between 14 and 20 words, combined with similar measures of word frequency, will result in material of approximately fourth through sixth grade readability levels (Dale-Chall, 1948; Flesch, 1951; Fry, 1951; Raygor, 1976).

Sentences written in the passive voice are consistently more difficult to comprehend than those written in the ~~passive~~ active voice. As research by Ruddell (1965), and Gibbons (1941), has demonstrated, the ability to deal with the passive voice is one of the last language skills to develop, and some students in middle schools may have difficulty with these sentences. By simply rewriting passive sentences into active sentences, the readability of many curricular materials could be increased.

Vocabulary Frequency

The frequency of the vocabulary is another important factor which affects readability. The importance of this factor is shown by its inclusion in almost every published readability formula (Dale-Chall, 1948; Spache, 1953; Fry, 1971; Harris-

Jacobsen, 1975). Research by Marks, Doctorow, and Wittrock (1974) has shown that the use of high frequency vocabulary increases the comprehension of selections. Therefore, no book should be considered for use in the middle school without some inspection of the frequency of the vocabulary. Many lists are available to aid teachers in evaluating vocabulary frequency. These include both the rank ordered lists of word frequency in adult materials, such as the Kucera-Francis List (1967), or the lists which are composed of words used frequently in children's reading materials, such as the Great Atlantic and Pacific List (Otto, 1972), or the Harris-Jacobsen List (1975). It has also proven feasible to make some judgment about the vocabulary frequency of material by counting the number of multi-syllabic words occurring in the material (Bormuth, 1966) or by simply noting the number of words with more than five letters (Raygor, 1976). These latter procedures are less time consuming than checking the actual frequency rank of the vocabulary words in the sample passages.

Concept Density

A third factor which greatly affects the readability of materials, but which is often neglected by the conventional formulas, is the idea of concept density. Concept density refers to the number of different ideas or concepts

which must be processed in order to comprehend the selection. Often repeating a concept by expressing it in another way aids comprehension because the reader is given more time to process the idea. The adage provided by the elderly rural preachers, "first you tell them what you will tell them, then you tell them, then you tell them what you told them" speaks to the idea of concept density. This is in direct contrast to writing in which few words are used to express an idea with little time available for the reader to process each concept. A good reader familiar with the subject can read material of high concept density very effectively. However, for students not familiar with the subject, a lower level of concept density aids comprehension. Often books which have been rewritten for higher readability have such a high concept load per number of words that they are more difficult to comprehend than the original text. High idea density is a major flaw found in many of the attempts to rewrite textbooks at lower levels; therefore, concept density must be taken into consideration when curricular materials are purchased.

The authors of this paper are not advocating that no middle school student should ever read prose which has high concept density, long and complex sentences, and esoteric vocabulary. However, it is our contention that the sentence length and complexity, concept density, and vocabulary load

of the curricular materials must match the learner's reading ability. A book that is too easy for a child is just as inappropriate as a book that is too difficult.

Utilize the Transescent's Background of Experience

One of the most potent of all cues for the successful reading of materials is the expectancy cue. An expectancy cue is defined as the predisposition to recognize words and grasp the meaning of a selection because of prior knowledge about the subject. Decoding is enhanced because a person already is familiar with much of the vocabulary, specialized or technical, associated with the subject. Comprehension is enhanced because the reader can more easily make hypotheses and assumptions about the meaning of the written message if he has a background of previous knowledge on which to base his hypotheses about the message. Materials which utilize the transescent's background of experiences such as a motor cycle repair manual, an article on the tie dying of "t" shirts, or instructions on skin care should be provided whenever possible for independent reading activities.

The idea of expectancy cues also has application for reading in the content areas. In many classes the instructor asks students to read the material before any discussion of the material or audio-visual presentation about the material

is given. Because of the potency of expectancy cues, the teacher might find that the students will be able to read the selections with greater ease and comprehension if discussions or audio-visual aids are used to introduce the topic before the students are asked to read.

Use Ego-centric Content

One of the characteristics of a learner-centered curriculum is that such curriculum recognizes the interests of the learners. To motivate the insecure transescent this may mean using content that is directly related to the student's perception of self. Problems such as those involving social behavior, peer approval, and parental control may be used. Experiences, real and vicarious, like leisure activities and comparisons with transescents in other times and places may stimulate students. Also, expectations of the transescent as he tries to project himself into the future can provide themes for materials. As the learner interacts with these kinds of materials, his interest is heightened and his insecurity is reduced by being able to relate to the content.

Emphasize Content Organization

Another way in which middle school teachers can help children interact more effectively with their curricular materials is to use materials and teaching techniques which

emphasize the organization of content. The recent proliferation of research on prose learning has raised many unanswered questions about how individuals learn from print. However, some studies have shown that it is possible to use certain in print structural cues and certain teaching strategies which will help students comprehend curricular materials. Studies by Cashen and Leicht (1970), and Crouse and Idstein (1972), found that the underlining of supra-ordinate and idea-oriented statements resulted in greater comprehension. According to the generative model of reading as proposed by Wittrock (1976), the generation of a sentence facilitates the retrieval and transfer of distinctive memories which increases comprehension.

Using the results from these studies the authors (Kurth and Moseley, 1977) found that a combination approach in which supra-ordinate sentences are underlined and students are asked to paraphrase these sentences results in improved comprehension and retention of both details and main ideas. Therefore, comprehension would be increased if curricular materials for middle schools would incorporate in print structural cues to signal supra-ordinate sentences, i.e., if sentences containing the main idea of selections and paragraphs were underlined, and if specific teaching strategies were used to help children paraphrase these sentences.

Value Convergent Thinking

To the insecure transescent, there is a security in having certain thinking activities which are convergent in nature. Divergent thinking is valued among educators, and convergent thinking should be valued, too. This is not to suggest that provisions for divergent thinking should not be made. Nor, are we suggesting that teachers employ the catechetical method of questions with certain answers to be memorized. "Best" answers can be found by discovery and through inquiry by students who have learned these processes.

Curricular materials should include opportunities for applying and synthesizing information in a convergent manner. Such materials should contain convergent questions and activities requiring the student to perform thinking activities like comparing, contrasting, predicting, and interpreting from information given. Such activities would require the transescent to put facts together and then use this information to form an answer. High level convergent thinking has the advantage of stimulating the mind and providing security.

Structure Choices

Many teachers are led to believe through their teacher preparation classes that it is a good educational practice to give students much freedom to choose which curricular materials and activities they wish to use. In many classrooms one may

find a variety of materials, learning centers, and activities. However, students who are confronted with too many materials may not be able to make wise use of them. If a student is completely overwhelmed by a myriad of choices, he may become confused and insecure. A learning environment in which the teacher often structures the choices so that the alternatives are fewer or where the teacher helps the student work through the decision making process is beneficial for the transescent.

In summary, it is apparent that these guidelines, although focusing on separate aspects of the student's interaction with curricular materials, are interrelated. Each focuses on an aspect of teacher selection and/or presentation of curricular materials, and each guideline is directed toward reducing inherent insecurity within the transescent. When selecting curricular materials for use with middle school students, teachers should provide every student with materials which are readable, organized, and learner-centered. These materials should be presented in a manner which provides the student with the necessary balance between security and risk-taking.

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